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China as a Regulatory State

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Abstract

This paper, by using data from a survey of 3,073 private enterprises in China, constructs an index to quantify the power of government vis-à-vis market, which is the distinguishing feature of various models of a market economy including private orderings, private litigations through courts, and regulatory state (Glaeser and Shleifer, 2002, 2003; Djankov et al., 2003). It is found that enterprises located in regions with greater powers of government vis-à-vis market enjoy better performance, suggesting that regulatory state is an appropriate model of a market economy for China. Evidence is also presented to rule out the concern that these results are driven by rent-seeking activities.

Keywords: Regulatory State, Disorder Costs, Dictatorship Costs, Transition Economy, China's Economic Reform, Rent Seeking

JEL Codes: P30, D02, L25

1 Introduction

Many developing economies have started to introduce private ownership and market competition after failures of experimenting with state ownership in much of the twentieth century. In the transition from state ownership to a market economy, however, there are different ideas and practices. The Washington Consensus, on one extreme, proposes to "stabilize, privatize, and liberalize", i.e., maintaining macroeconomic stability, pushing for domestic liberalization, privatization and openness to international trade, and drastically reducing the role of the state in the economic sphere.¹ Meanwhile, China has followed a different route: the role of government in the economy, such as enacting, interpreting and enforcing laws and national ordinances, has remained significant after three decades of economic reforms (Walder, 1995; Rodrik, 2006).

The different approaches to transiting toward a market economy could reflect the fundamental differences in the understanding of what a market economy should look like. Indeed, there are three distinct models of a market economy, i.e., *private orderings*, *private litigation through courts*, and *regulatory state*, which involve an increasing power of government vis-à-vis market. Glaeser and Shleifer (2002, 2003), and Djankov, Glaeser, La Porta, Lopez-de-Silanes, and Shleifer (2003) offer a general framework for understanding the choice among the different models of a market economy. It is argued that, for a market economy to function properly, governments should provide protections to investors against expropriation by thieves, competitors, or tort-feasors, which are called disorder (Hobbes, 1651). At the same time, governments should refrain from becoming expropriators themselves, which could lead to dictatorship. The control of disorder may lead to greater dictatorship while the control of government abuse may bring larger disorder (for details see Figure 1, which is copied from Figure 1 of Djankov, Glaeser, La Porta, Lopez-de-Silanes, and Shleifer, 2003). The challenge is to find an appropriate model to balance these two costs simultaneously.

Clearly, the Washington Consensus is leaned toward *private orderings* and *private litigation through courts* as the most ideal models of a market economy so that it advocates for minimizing the role of government in the economy. However, these target models of a market economy require a host of preconditions for them to function properly. Specifically, for private orderings to be an efficient choice, it requires protection of private property

¹This has been the guiding principle for economic reforms in most of the former socialist economies, Latin America, Africa, and South and East Asia (Williamson, 1989; Blanchard, Dornbusch, Krugman, Layard and Summers, 1992; Blanchard, Boycko, Dabrowski, Dornbusch, Layard and Shleifer, 1993; Rodrik, 2006).

rights of one market participant against another. Meanwhile, private litigation hinges upon independent judges who are immune to influences from the rich and the politically-connected. In the former socialist economies, however, the property rights protection for private enterprises has yet to be formally established and time tested. Judges, who were not needed at all in the central-planning system, are newly appointed by the state and their independence is dubious (Clarke, Murrell, and Whiting, 2008). Indeed almost all other developing economies share the same lack or weakness of institutions that are required for the models of a market economy (i.e., private orderings and private litigation through courts) proposed by the Washington Consensus. That might be the reason why developing economies following the Washington Consensus did not display impressive economic performance (Rodrik, 2006). And it may well be the case that *regulatory state* (i.e., significant power of government vis-à-vis market) could be an optimal model of a market economy for these economies.²

The success of economic reforms in countries like China, India and Vietnam has often been interpreted as the victory of an incremental and cautious reform procedure. However, from the perspective of the choice of a right model of a market economy, it could well be the result of having chosen a suitable target model (i.e., regulatory state) of a market economy that these countries are moving toward. Albeit a convincing argument, there are few empirical studies on the specific model of a market economy that these economies have chosen (e.g., Frye and Shleifer, 1997; Hoff and Stiglitz, 2004). In general, empirical evaluations of the various models of a market economy are challenging because of the difficulty in quantifying the power of government vis-à-vis market. In this paper, we fill in the void by quantifying the power of government vis-à-vis market in the economy, and establish that *regulatory state* is an appropriate model of a market economy for China.

The data used in this study comes from a survey conducted in 1999 containing a sample of 3,073 private enterprises in China. In the survey, there is a question regarding how an entrepreneur would resolve business disputes with others. The available answers are: (i) doing nothing; (ii) negotiating

²The optimal target model depends on the institutional constraints and new developments in an economy. The experience of currently developed economies provides support to this view. According to Glaeser and Shleifer (2003), there was a change in the optimal model of a market economy in the U.S. in the late 19th century. Before then, private litigation through courts was the major model of a market economy. However, the massive industrialization and commercialization of the American economy in the 19th century generated increasing disorder and undermined the courts as the sole institution securing property rights. Hence, the U.S. market economy leaned toward the model of a regulatory state.

between themselves; (iii) seeking help from private network; (iv) court ruling; and (v) seeking government help. We group these answers into three categories corresponding to the three models of a market economy proposed by Glaeser and Shleifer (2002, 2003), and Djankov, Glaeser, La Porta, Lopez-de-Silanes, and Shleifer (2003): *private orderings* for answers (i), (ii), and (iii); *private litigation through courts* for answer (iv); and *regulatory state* for answer (v).³

To measure the power of government vis-à-vis market in each region,⁴ we first assign ordinal values 1, 2 and 3 to these three categories, i.e., value 1 for private orderings, value 2 for private litigation through courts, and value 3 for regulatory state. A variable called *Power of Government vis-à-vis Market* is then constructed for each region based on the average value of the power of government vis-à-vis market perceived by the enterprises located in that region, with a higher value indicating a greater power of government vis-à-vis market.

We find that private enterprises located in regions with greater powers of government vis-à-vis market in resolving business disputes have better enterprise performance. Our results suggest that *regulatory state* is an appropriate model of a market economy for China. These results, however, could be biased due to some omitted variable and reverse causality issues. We then control for a host of variables related to entrepreneurial characteristics, enterprise characteristics, regional characteristics, and industry dummies, and find that our results remain robust to these controls.

To further deal with the possible endogeneity problems, we adopt the instrumental variable approach. We choose the distance between the capital of each region and the national capital city of China - Beijing - as an instrumental variable for the power of government vis-à-vis market in resolving business disputes. Over several thousand years the Chinese political system has always been characterized by the centralization of political power during most of the periods. Even today, the central government keeps the power to appoint regional government officials, and issues various laws and national ordinances for them to guide the regional administrations. Given the substantial variations in endowments, socioeconomic development and culture across regions in China, however, laws and national ordinances enacted by the central government tend to be sketchy in nature, and need to be interpreted and enforced by the regional governments so as to make them more adapted

³In Section 2, we will discuss administrative structures in China and explain why we take reply (v) as an indicator of *regulatory state*.

⁴Here region refers to 22 provinces, 4 province-level municipalities, and 5 minority autonomous regions in China, and government refers to the regional governments rather than the central government.

to local circumstances. Meanwhile, the degree of central government control over regional governments becomes weaker in regions farther away from Beijing, allowing more freedom for the regional government officials to interpret and enforce laws and national ordinances. Hence is the old Chinese saying of "*The Mountains Are High and the Emperor is Far Away*." It is thus expected that the power of government vis-à-vis market in resolving business disputes is greater in regions that are farther away from Beijing. Indeed the first stage of two-stage-least-squares regressions confirms the positive correlation, and the second stage shows that our earlier results regarding the impact of the power of government vis-à-vis market on enterprise performance remains significant and robust to various controls.

For robustness checks, we use alternative measures of the power of government vis-à-vis market, focus on some subsamples of the dataset to address specific types of business disputes, and control for the role of the capital-labor ratio. Our results are robust to these exercises.

Our data set also allows us to test the predictions of the theoretical framework proposed by Glaeser and Shleifer (2002, 2003) and Djankov, Glaeser, La Porta, Lopez-de-Silanes, and Shleifer (2003): an increase of disorder costs (i.e., expropriation by thieves, competitors, or tort-feasors) calls for a greater power of government vis-à-vis market whereas an increase of dictatorship costs (i.e., expropriation by governments) requires a lower power of government vis-à-vis market. Indeed, we find that enterprises facing more influential competitors (which implies higher disorder costs) perceive a greater need for the power of government vis-à-vis market in resolving business disputes whereas the opposite is found when enterprises face more expropriation by the governments (which implies higher dictatorship costs).

One may interpret our results as that those enterprises located in regions with greater powers of government vis-à-vis market conduct more rent seeking activities and thus achieve better enterprise performance. We investigate this possibility by looking at various channels (i.e., input procurement, access to bank loans, availability of production locations, supply of electricity and water, recruitment of skilled labor, sales of products, and sales of services) in which enterprises may obtain favors through rent seeking activities. It is found that enterprises located in regions with greater powers of government vis-à-vis market do not obtain any favors along these channels, thereby ruling out the rent seeking as the driving force behind our results.

One may still be curious to know why China's regional government officials have incentives to enforce private contracts and resolve business disputes. Here we can draw insights from a large literature on China's economic reform. It is argued that China's central government has adopted fiscal decentralization policy by delegating substantial discretion over regional

economies to regional governments while maintaining its strict political control over regional governments, especially in the appointment and promotion of regional government officials. Under this institutional arrangement, the regional government officials have incentives to cultivate satisfactory business environments and promote economic development so as to enhance their private benefits of being in power and the chances of being further promoted (*e.g.*, Blanchard and Shleifer, 2001; Allen, Qian, and Qian, 2005; Roland, Qian, and Xu, 2006; Clarke, Murrell, and Whiting, 2008).

The rest of the paper is organized as follows. Section 2 discusses the data and variables. Empirical results and their interpretations are presented in Section 3. The paper concludes with Section 4.

2 Data and Variables

The dataset used in this paper comes from the *Private Enterprise Survey* in China, which was conducted in 1999 jointly by the United Front Work Department of the Central Committee of the Communist Party of China, the All China Industry and Commerce Federation, and the China Society of Private Economy at the Chinese Academy of Social Sciences.⁵

Multi-stage stratified random sampling method is used in the *Survey* to achieve a balanced representation across all regions and industries in China. The total number of private enterprises to be surveyed was first determined. Afterwards, six cities/counties were selected from each of the thirty-one province-level regions (*i.e.*, the 22 provinces, 4 province-level municipalities and 5 minority autonomous regions), which included the capital city of each region, one district-level city, one county-level city, and three counties. Then the number of private enterprises to be surveyed in each region was calculated as the product of the region's share of private enterprises in the national total with the total number of private enterprises in the survey. The same method was used to determine the number of sample enterprises in every city/county or industry. Finally, private enterprises were randomly chosen from each sub-sample.

The initial sample size is 3,073 enterprises. After deleting observations with no industry code, no sales and no employment figure, we obtain the final sample of 2,616 private enterprises. Table 1 shows the distribution of the initial sample and final sample across regions in China as well as the

⁵This dataset has been used by other research papers, *e.g.*, Bai, Lu, and Tao (2006) in studying the access to bank loans by private enterprises, Li, Meng, and Zhang (2006) in studying entrepreneurs and their political participation, and Du, Lu, and Tao (2008) in examining the impacts of property rights protection on enterprise diversification.

percentage of enterprises with complete information. Jiangsu, Shandong and Guangdong have the largest numbers of observations while Tibet, Qinghai and Ningxia have the smallest. The average percentage of enterprises with complete information across regions is 83.72% with standard deviation 0.086, which means the final sample is representative.

The dependent variable for our study is *Enterprise Performance*, measured by the logarithm of output per worker. This is consistent with the convention in the literature investigating the impacts of the quality of institutions on economic performance and growth. For example, Hall and Jones (1999) use the logarithm of output per worker to study the effects of social infrastructures, i.e., institutions and government policies, on the cross-country differences in economic performance. Later studies such as Bockstette, Chanda and Putterman (2002) and Masters and McMillan (2002) follow suit. Acemoglu, Johnson and Robinson (2001, 2002) use logarithm of GDP per capita, which is similar in nature to the variable used here but at a more aggregate level, to study the effects of institutional quality on economic growth. Subsequent studies including Alcalá and Ciccone (2004), Glaeser, La Porta, Lopez-de-Silanes and Shleifer (2004), Acemoglu and Johnson (2005) adopt the same country-level performance variable. Panda and Udry (2005) provide a good summary of the uses of variables in this literature.

The key explanatory variable in our study is the power of government vis-à-vis market in each region. There is one question in the *Survey* regarding how private entrepreneurs would deal with business disputes. The available answers are: (i) doing nothing; (ii) negotiating between themselves; (iii) seeking help from private network; (iv) court ruling; and (v) seeking government help. We group them into three categories corresponding closely to the three alternative models of a market economy, as proposed by Glaeser and Shleifer (2002, 2003) and Djankov, Glaeser, La Porta, Lopez-de-Silanes, and Shleifer (2003): *private orderings* for answers (i), (ii), and (iii); *private litigation through courts* for answer (iv), and *regulatory state* for answer (v). Here we take a broad definition of *regulatory state*, which includes not only enactment of laws and national ordinances, but also interpretation and enforcement of laws and national ordinances (e.g., Glaeser, Johnson, and Shleifer, 2001), which, in our view, is particularly relevant to the case of China. China has a centralized political system, in which the central government appoints the regional government officials and enacts laws and national ordinances for them to guide their administrations. Due to the substantial variations in endowments, socioeconomic development and culture across regions, however, it is difficult for the central government to enact unified laws and national ordinances applicable to all regions. For example, it took 12 years for the National People's Congress to pass the *Law on Township and Village Enter-*

prises (Clarke, Murrell, and Whiting, 2008). As a result, laws and national ordinances enacted by the central government tend to be sketchy in nature and need to be interpreted and enforced by the regional governments so as to make them more adapted to local circumstances. Seeking government help in resolving business disputes involves the interpretation and enforcement of laws and national ordinances by the regional governments. Hence, we take “seeking government help in business disputes” as an indicator of *regulatory state*.

We then assign ordinal value of 1, 2 and 3 to the three categories respectively, i.e., value 1 for private orderings, value 2 for private litigation through courts, and value 3 for regulatory state. A variable called *Power of Government vis-à-vis Market* is then constructed for each region based on average value of the power of government vis-à-vis market perceived by the enterprises located in that region, with a higher value indicating a greater power of government vis-à-vis market. There are variations in the power of government vis-à-vis market across China’s regions, with a mean of 1.24 and a standard deviation of 0.13.

To alleviate the concern of omitted variables, we include a host of variables that may affect enterprise performance. The background and capability of entrepreneurs can be important determinants of private enterprise performance. Therefore, we include some conventional managerial human capital variables like *Age* (the age of the entrepreneur by the end of 1999), *Education* (years of formal schooling), and *Managerial Experiences* (the number of years an entrepreneur had held a managerial position before he or she started his or her own business), and some political participation variables such as *CPC Membership* (a dummy variable taking value one if the entrepreneur is a member of the Chinese People’s Congress and zero otherwise) and *CP-PCC Membership* (a dummy variable taking value one if the entrepreneur is a member of the Chinese People’s Political Consultative Conference and zero otherwise), *Government Cadre* (a dummy variable taking value one if the entrepreneur used to be a government official and zero otherwise), and *SOE Cadre* (a dummy variable taking value one if the entrepreneur used to be a manager in state-owned enterprises). We also control for enterprise characteristics, such as *Enterprise Size* (the logarithm of the number of employees in each enterprise) and *Enterprise Age* (the logarithm of the number of years an enterprise had been established by the end of 1999), that have been suggested to be important for enterprise performance, and include industry dummies to account for possible differences across industries. Finally, regional characteristics such as local market size measured by the *Logarithm of GDP*, and infrastructure measured by the *Logarithm of Railway Density*, are also included.

To further address the potential endogeneity issue, we adopt the instrumental variable approach. Specifically, we use the distance between the capital city of each region and the national capital of China - Beijing - as an instrumental variable for the power of government vis-à-vis market in resolving business disputes (details will be discussed in Section 3.2).

Summary statistics of all key variables are given in Table 2.

3 Main Results

3.1 Benchmark Regressions

To investigate the impacts of the power of government vis-à-vis market on enterprise performance, we estimate the following equation:

$$y_{eir} = \mu_i + \alpha G_r + \beta R_r + X'_{eir} \gamma + \varepsilon_{eir} \quad (1)$$

where y_{eir} is the performance of enterprise e in region r and industry i , μ_i is the industry dummy, G_r represents the power of government vis-à-vis market in region r , R_r is a vector of regional characteristics, X'_{eir} is a vector of other control variables (i.e., entrepreneurial and enterprise characteristics), and ε_{eir} is a random error term.

In general the standard errors for micro-level data need to be adjusted for possible clustering to deal with the heteroskedasticity problem (e.g., Liang and Zeger, 1986). When the number of clusters is small (i.e., less than 42), however, the clustered standard errors could be misleading and unreliable (e.g., Wooldridge, 2003, 2006; Angrist and Pischke, 2008). As the number of clusters in our study is 31, we follow Angrist and Lang (2004) in using the White-robust standard errors, i.e., HC_1 (White, 1980; MacKinnon and White, 1985).

Table 3 shows the ordinary-least-squares estimation results for equation (1) regarding the impacts of the power of government vis-à-vis market on enterprise performance. Column 1 reports the benchmark regression results that *Power of Government vis-à-vis Market* produces a positive and statistically significant effect on enterprise performance.

Our results are robust when control variables related to entrepreneurial characteristics and enterprise characteristics are included stepwisely (Columns 2 and 3 of Table 3). The coefficients of control variables also make sense. It is found that an entrepreneur with a higher level of education and more years of being manager in a state-owned enterprise enjoys better enterprise performance. It is also found that smaller enterprises exhibit higher impetus to growth.

The basic message conveyed by Table 3 is clear: A greater power of government vis-à-vis market in resolving business disputes enhances enterprise performance. The result suggest that *regulatory state* is an appropriate model of a market economy for China. This can be understood as China lacks secure protection of private properties and independence of judges, which are essential for the functioning of *private orderings* and *private litigation through courts*.

3.2 Instrumental Variable Estimation

The estimation results in Table 3 could be biased due to the endogeneity issues. For example, we may not exhaust all the possible variables that correlate with both the power of government vis-à-vis market and enterprise performance. Meanwhile, enterprises with better performance may be more likely to cluster in regions with greater powers of government vis-à-vis market. To address these potential endogeneity issues, we adopt the instrumental variable estimation strategy. Specifically, the instrumental variable used is the distance between the capital city of each region and the national capital, Beijing, where the central government is located.

Over thousands of years the Chinese political system has been characterized by the centralization of political power during most of the periods. The central government keeps the power to appoint regional government officials. It also issues various laws and national ordinances to guide the regional administrations. Because China is a large country with substantial variations in endowments, socioeconomic development and culture across regions, however, unified laws and national ordinances may be ill-suited for the local conditions of some regions. Thus it is essential for regional government officials to interpret and enforce laws and national ordinances so as to make them more adapted to the local circumstances. Meanwhile, it is more costly for the central government to frequently inspect local situations and monitor local bureaucrats in regions farther away from Beijing. Consequently, the higher degree of information asymmetry makes the central government more reliant on local officials in regional governance. Thus, regional bureaucrats in regions farther away from Beijing are subject to less central control and have a greater degree of freedom in interpreting and enforcing laws and national ordinances. In other words, regional government officials in regions farther away from Beijing have greater de facto powers in running the regional economy. Indeed there is an old Chinese saying that "*The Mountains Are High and the Emperor is Far Away*." It is thus expected that in regions farther away from Beijing, the powers of regional government vis-à-vis market in resolving business disputes are greater.

One concern of the validity of this instrumental variable is that it might affect enterprise performance through channels other than the power of government vis-à-vis market, such as climate and endowments. This, however, should not be a concern in our case. The national capital, Beijing, is located in the northern-central area of the country with many regions lying to the north, south, west or east of the capital. Therefore, distance from Beijing does not suggest any particular endowment and climate characteristics. For example, Harbin, the capital city of Heilongjiang province and Shanghai have similar distances from Beijing with linear distances of 1,049 kilometers and 1,066 kilometers from Beijing, respectively. However, these two regions have striking differences in endowments and climate.

Figure 2 shows the positive correlation between the power of regional government vis-à-vis market in resolving business disputes and the distance between regional capital city and Beijing. Table 4 presents the two-stage-least-squares estimation results. The first-stage regression results reported in Column 1 show that the distance between regional capital city and Beijing has a positive and statistically significant coefficient, which confirms our argument that in regions farther away from Beijing the powers of government vis-à-vis market in resolving business disputes are greater. Meanwhile, the relevance condition for our instrumental variable is further confirmed by the Anderson canonical LR statistic. And the Cragg-Donald F-statistic rules out the concern for weak instrument.⁶

Column 2 of Table 4 presents the second-stage regression results. The results reinforce our earlier findings and show that the power of government vis-à-vis market has a positive and statistically significant causal effect on enterprise performance. Our main results – the statistically significant positive impacts of the power of government vis-à-vis market on enterprise performance – remain robust when entrepreneurial and enterprise characteristics are included as control variables (in Columns 3-4 of Table 4).

3.3 Robustness Checks

First, we investigate whether our main results are robust to alternative ordinal values assigned to the three categories of a market economy, *i.e.*, *private orderings*, *private litigations through courts*, and *regulatory state* in constructing the index of the power of government vis-à-vis market. In Section 2, we assigned values 1-3 to these three categories of a market economy with the purpose of showing an increasing power of government vis-à-vis market. One

⁶The Cragg-Donald F-statistic values for our regressions are significantly above the value of 10, which is considered as the critical value by Staiger and Stock (1997).

may argue that the ordinal values assigned look somewhat arbitrary. To make sure that the absolute value assigned to each category does not matter but the relative ranking is important, we experiment with different values attached to each category. In the first experiment, we give the value of 1 to *private orderings*, 2 to *private litigations through courts* and 10 to *regulatory state*. In the second experiment, we let *private orderings* be 1, *private litigation* be 9 and *regulatory state* be 10. In the third experiment, we assign values of 1, 5 and 10 to *private orderings*, *private litigations* and *regulatory state*, respectively.

Columns 2-4 of Table 5 summarize the estimation results when the above three alternative constructions for the power of government vis-à-vis market are used, while Column 1 simply replicates Column 4 of Table 4 as the benchmark for comparison. All the control variables are included in the regressions but not reported to save space. It is clear that our main results reported in Tables 3-4 remain robust when we vary the values assigned to different categories of a market economy, which confirms that the exact value assigned to each category does not matter, but the relative ranking of the three categories is important.

Second, we use an alternative measure of the power of government vis-à-vis market. Fan, Wang, and Zhu (2003) has an index on the power of government in the economy, with a higher value indicating a *lower* power of government in the economy. Column 1 of Table 6 shows that the Fan-Wang-Zhu index is negatively correlated with the distance between regional capital city and Beijing (in Panel B of Column 1), and it has a negative and statistically significant causal effect on enterprise performance (in Panel A of Column 1), which are consistent with our earlier findings.

Third, we test the robustness of our results using a subsample of our dataset. In the *Survey*, there is a question regarding the identity of the party with whom an enterprise is having business disputes. It could be: with customers, or suppliers, or government agencies. As disputes with government agencies could be qualitatively different from those with commercial partners, we restrict our sample to those observations with only commercial disputes. Column 2 of Table 6 shows that our central results remain robust to the use of this subsample.

Lastly, it has been argued that enterprise performance could be affected by the capital-labor ratio. Unfortunately, there is quite a lot of missing information on the amount of capital employed by enterprises in our dataset. Nonetheless, we conduct a robustness test based on a reduced sample by including the logarithm of the capital-labor ratio as a control variable for enterprise performance. As shown in Column 3 of Table 6, our main results

still hold in this subsample.⁷

Overall, our robustness analysis as summarized in Tables 5-6 confirms our earlier finding that the power of government vis-a-vis market has a positive and significant causal effect on enterprise performance in China.

3.4 A Comparative Statics Analysis

Our above empirical analysis is based on the theoretical framework proposed by Glaeser and Shleifer (2002, 2003) and Djankov, Glaeser, La Porta, Lopez-de-Silanes, and Shleifer (2003). To lend support for our empirical analysis, we test the predictions of this theoretical framework regarding when there is a need for a greater power of government vis-à-vis market in choosing the appropriate model of a market economy. As argued by Glaeser and Shleifer (2002, 2003) and Djankov, Glaeser, La Porta, Lopez-de-Silanes, and Shleifer (2003), the appropriate model of a market economy should balance disorder costs (which are caused by the expropriation by thieves, competitors, or tort-feasors) and dictatorship costs (which are caused by the expropriation by governments). Thus, a greater power of government vis-à-vis market is expected when disorder costs are higher and/or dictatorship costs are lower. The *Survey* contains information that allows us to gauge the disorder costs and dictatorship costs perceived by entrepreneurs, based on which we can carry out a comparative statics analysis.

In the Survey, one question asks each entrepreneur whether there exist influential producers in his/her industry that enjoy favorable market positions to facilitate input procurement and output sales and therefore they are dominant players in the market. It is expected that when facing such dominant competitors, private enterprises encounter higher disorder costs⁸ and perceive a greater need for government regulations to alleviate market disorders (Glaeser and Shleifer, 2002, 2003; Djankov, Glaeser, La Porta, Lopez-de-Silanes, and Shleifer, 2003). We construct a dummy variable called *Influential Competitors*, and carry out an Ordered Probit regression of *Power of Government vis-à-vis Market* on *Influential Competitors* along with a set of control variables. As shown in Column 1 of Table 7, *Influential Competitors* has a positive and statistically significant estimated coefficient, which implies that the increase of disorder costs leads to a rise in the power of government vis-à-vis market as predicted by Glaeser and Shleifer (2002, 2003) and Djankov, Glaeser, La Porta, Lopez-de-Silanes, and Shleifer (2003).

⁷The decrease in the magnitude and significance of the estimated coefficient could be due to the dramatic decrease of sample size.

⁸For example, private enterprises often encounter difficulties in collecting payments from large influential enterprises with whom they have businesses.

In the *Survey*, another question asks entrepreneurs about the amount of extralegal payments to the government made by the enterprises. As argued by Johnson, McMillan and Woodruff (2002) and Cull and Xu (2005), extralegal payments to the government measures the extent of government expropriation. It is thus expected that enterprises facing higher extralegal payments to the government encounter higher dictatorship costs and perceive a lesser need for the power of government vis-à-vis market such as less government regulation (Glaeser and Shleifer, 2002, 2003; Djankov, Glaeser, La Porta, Lopez-de-Silanes, and Shleifer, 2003). We then construct a variable called *Ratio of Extralegal Payments* (measured as the ratio of extralegal payments to the government by the enterprise over its profit) and use it as a proxy for dictatorship costs, with a higher value indicating greater dictatorship costs. We carry out an Ordered Probit regression of *Power of Government vis-à-vis Market* on *Ratio of Extralegal Payments* along with a set of control variables. As shown in Column 2 of Table 7, *Ratio of Extralegal Payments* has a negative and statistically significant estimated coefficient, which implies that the increase of dictatorship costs leads to a fall of the power of government vis-à-vis market as predicted by Glaeser and Shleifer (2002, 2003) and Djankov, Glaeser, La Porta, Lopez-de-Silanes, and Shleifer (2003).

3.5 Does Rent Seeking Drive Our Results?

One may interpret our results as that those enterprises located regions with greater powers of government vis-à-vis market conduct more rent seeking activities and achieve better enterprise performance because they secure favors and protection from bureaucrats that enhance their business profitability. Of course, asking for government help in resolving business disputes could possibly reflect rent seeking activity. However, the issue is whether rent seeking is the dominant force that drives the positive relationship between the power of government vis-à-vis market and enterprise performance.

Presumably if rent seeking is the driving force, an enterprise located in a region with a greater power of government vis-à-vis market would most likely obtain favors from the government in the forms of lower production costs and/or easier sales of its product or service. In the *Survey*, there are questions regarding whether the enterprise has difficulties in the following seven aspects of the enterprise operation: input procurement, access to bank loans, availability of production locations, supply of electricity and water, recruitment of skilled labor, sales of product, and sales of service. The answers to the access to bank loans range from 1 to 5 whereas the answers for the remaining six questions range from 1 to 3, with a higher value indicating less difficulties in the specific operation. We conduct two-stage-least-squares

regressions of these seven aspects of the enterprise operation on *Power of Government vis-à-vis Market* with the instrumental variable being the distance between the regional capital city and the national capital, Beijing. As show in Columns 1-7 of Table 8, six of the seven estimated coefficients are negative and the only positive one is statistically insignificant. These results suggest that enterprises located in regions with greater powers of government vis-à-vis market do not obtain favors in the forms of lower production costs and/or easier sales of its product or service that are reflected in these seven aspects.⁹ In our opinion, these aspects we consider encompass all the important concerns of private enterprises in China. According to Asian Development Bank (2003), the most serious constraints encountered by private enterprises include the difficulty in getting access to external finance such as bank loans and the difficulty in recruiting skilled managers and technical staff. If rent seeking were the dominant force, at least some of the aspects we have examined should have turned out positive and significant estimated coefficients. Hence, we can largely rule out rent seeking as the primary force that drives our results.¹⁰

One may be curious to know why China's regional government officials have incentives to enforce private contracts and resolve business disputes for the sake of, as a net effect, improving business environment rather than rent seeking. Here we can draw insights from the recent studies on market-preserving federalism or regional decentralization in China's economic reforms (Blanchard and Shleifer, 2001; Allen, Qian, and Qian, 2005; Roland, Qian, and Xu, 2006; Clarke, Murrell, and Whiting, 2008). It is argued that the Chinese government system is characterized by substantial devolution of administrative power from the central government to regional administrations, in which fiscal federalism or fiscal decentralization is one prominent feature. Nonetheless, at the same time the central government keeps the political power to appoint, promote or sack regional governors. Governors of regions with better economic performance are more likely to be promoted. This regional decentralization under the control of the central government is most likely to generate regional competition for economic growth through

⁹ Alternatively, we have carried out another empirical test, in which these seven channel variables are included as additional control variables in the regression of *Enterprise Performance* on *Power of Government vis-à-vis Market*. The regression results, not reported here (available upon request), show that there are no changes in the magnitude and significance of our key explanatory variable, *Power of Government vis-à-vis Market*, thereby ruling out the concern of rent seeking as the primary driving force for our main findings.

¹⁰ Presumably, a regional government more involved in resolving business disputes is more likely to cultivate an institutional environment with better contract enforcement, which subsequently leads to higher productivities of enterprises located in that region.

various ways, one of which could be the interpretation and enforcement of laws and national ordinances by regional bureaucrats. This could explain to a large extent why rent seeking may not be the dominant force in shaping the nature of *regulatory state* in China.

4 Conclusion

In the past decades, we have witnessed the transition of many developing economies in various parts of the world toward the market economy. The variations in their transition paths and economic performance have led to intensive debates regarding the advantages and disadvantages of various models of a market economy. Glaeser and Shleifer (2002, 2003) and Djankov, Glaeser, La Porta, Lopez-de-Silanes, and Shleifer (2003) have argued that there are three distinct models of a market economy, *i.e.*, *private orderings*, *private litigations through courts*, and *regulatory state*, with an increasing power of government vis-à-vis market in the economy. As one moves from *private orderings*, to *private litigations through courts*, and *regulatory state*, the cost of disorder resulting from private expropriation decreases while that of dictatorship coming from state expropriation increases. The equilibrium choice then lies in the trade-off between the cost of disorder and that of dictatorship.

In this paper, using data from a survey of 3,073 private enterprises in China conducted in 1999, we construct an index to quantify the power of government vis-à-vis market, and find that the power of government vis-à-vis market is beneficial to enterprise performance. Our results are robust to a set of controls related to entrepreneurial, enterprise, regional and industrial characteristics, and to the use of instrumental variable estimation. These results suggest that *regulatory state* is an appropriate model of a market economy for China.

We also find that the power of government vis-à-vis market is greater when disorder costs are higher or dictatorship costs are lower, thereby suggesting that the choice among the three models of market economy depends crucially upon the quality of institutional environment. In the case of China, protection of private properties was not written into its constitution until 2004, and the independence of courts is dubious. Thus, *regulatory state* emerges as a second-best choice for China in its transition to a market economy.

Our findings give an interpretation of China's successful reform drastically different from the earlier studies. The existing literature on economic transition almost invariably focuses on the comparison of the incremental reform approach in China versus the big bang approach in most other tran-

sition economies such as Russia (e.g., Roland, Qian, and Xu, 1999, 2006). That literature implicitly assumes that China and Russia share the same target model of a market economy, i.e., *private orderings* and *private litigation through courts*, but only differ in their paths toward the target. However, in our view, China adopts *regulatory state* as an appropriate target model of a market economy based on the existing institutional constraints, which allows the state to maintain social order, provide a reasonable level of property rights protection, and avoid social disruption and disorganization in economic restructuring. Officially, China has been pursuing the "socialist market economy model" in which regional governments employ extensive regulations, industrial policies and state ownership to promote economic development. This is largely consistent with the *regulatory state* model. In contrast, Russia is widely perceived to have conducted radical transformations toward laissez-faire capitalism, reflected in some primary reform schemes such as the Gaidar program in the 1990s (Randolph, 1994; Perotti, 2002; Aziz, 2006). This interpretation also sheds light on the so-called China puzzle, i.e., China achieved fast economic growth despite deeply flawed economic institutions including property rights protection and contract enforcement. According to our thesis, this is largely because China has adopted *regulatory state* as its model of a market economy, which requires few economic institutions to sustain the operation of markets.

References

- Acemoglu, Daron and Simon Johnson. 2005. "Unbundling Institutions", *Journal of Political Economy* 113, 949-995.
- Acemoglu, Daron, Simon Johnson, and James A. Robinson. 2001. "The Colonial Origins of Comparative Development: An Empirical Investigation", *American Economic Review* 91, 1369-1401.
- Acemoglu, Daron, Simon Johnson, and James A. Robinson. 2002. "Reversal of Fortune: Geography and Institutions in the Making of the Modern World Income Distribution", *Quarterly Journal of Economics* 117, 1231-1294.
- Alcalá, Francisco and Antonio Ciccone. 2004. "Trade and Productivity", *Quarterly Journal of Economics* 119, 613-646.
- Allen, Franklin, Jun Qian and Meijun Qian. 2005. "Law, Finance, and Economic Growth in China", *Journal of Financial Economics* 77, 57-116.
- Angrist, Joshua and Kevin Lang. 2004. "Does School Integration Generate Peer Effects? Evidence from Boston's Metco Program", *American Economic Review* 94, 1613-1634.

Angrist, Joshua and Jörn-Steffen Pischke. 2008. *Mostly Harmless Econometrics*, Princeton University Press.

Asian Development Bank. 2003. "The Development of Private Enterprises in the People's Republic of China", Asian Development Bank Publication.

Aziz, Rakhimov. 2006. "The Comparison of Russian and Chinese Economic Reforms in Transition to the Market Economy", working paper, International Christian University.

Bai, Chong-En, Jiangyong Lu, and Zhigang Tao. 2006. "Property Rights Protection and Access to Bank Loans: Evidence from Private Enterprises in China", *Economics of Transition* 14, 611-628.

Blanchard, Olivier, Maxim Boycko, Marek Dabrowski, Rudiger Dornbusch, Richard Layard, and Andrei Shleifer. 1993. *Post-Communist Reform: Pain and Progress*, Cambridge, MA: MIT Press.

Blanchard, Olivier, Rudiger Dornbusch, Paul Krugman, Richard Layard, and Lawrence Summers. 1992. *Reform in Eastern Europe*, Cambridge, MA: MIT Press.

Blanchard, Olivier and Andrei Shleifer. 2001. "Federalism With and Without Political Centralization: China Versus Russia", *IMF Staff Papers* 48, 171-179.

Bockstette, Valerie, Areendam Chanda and Louis Putterman. 2002. "States and Markets: The Advantage of an Early Start", *Journal of Economic Growth* 7, 347-369.

Clarke, Donald, Peter Murrell, and Susan Whiting. 2008. "The Role of Law in China's Economic Development", in Thomas Rawski and Loren Brandt ed. *China's Great Economic Transformation*, Cambridge University Press.

Cull, Robert, and Lixin Colin Xu. 2005. "Institutions, Ownership, and Finance: the Determinant of Profit Reinvestment among Chinese Firms", *Journal of Financial Economics* 77, 117-146.

Du, Julian, Yi Lu, and Zhigang Tao. 2008. "Property Rights Protection and Firm Diversification: Evidence from China's Private Enterprises", working paper.

Djankov, Simeon, Edward Glaeser, Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer. 2003. "The New Comparative Economics", *Journal of Comparative Economics* 31, 595-619.

Fan, Gang, Xiaolu Wang, and Henpeng Zhu. 2003. *Reports on the Relative Progress of Marketization in Different Regions in China*, Economic Science Publishing House, China.

Frye, Timothy, and Andrei Shleifer. 1997. "The Invisible Hand and the Grabbing Hand", *American Economic Review* 87, 354-358.

- Glaeser, Edward, Rafael La Porta, Florencio Lopez-de-Silanes and Andrei Shleifer. 2004. "Do Institutions Cause Growth", *Journal of Economic Growth* 9, 271-303.
- Glaeser, Edward, Simon Johnson, and Andrei Shleifer. 2001. "Coase versus the Coasians", *Quarterly Journal of Economics* 116, 853-899.
- Glaeser, Edward, and Andrei Shleifer. 2002. "Legal Origins", *Quarterly Journal of Economics* 117, 1193-1229.
- Glaeser, Edward, and Andrei Shleifer. 2003. "The Rise of the Regulatory State", *Journal of Economic Literature* 41, 401-425.
- Hall, Robert E., and Charles I. Jones. 1999. "Why Do Some Countries Produce So Much More Output per Worker than Others?", *Quarterly Journal of Economics* 114, 83-116.
- Hobbes, Thomas. 1651. *Leviathan*, reprinted in: R. Tuck ed. *Leviathan*, Cambridge University Press: New York, NY.
- Hoff, Karla, and Joseph E. Stiglitz. 2004. "After the Big Bang? Obstacles to the Emergence of the Rule of Law in Post-Communist Societies", *American Economic Review* 94, 753-763.
- Johnson, Simon, John McMillan, and Christopher Woodruff. 2002. "Property Rights and Finance", *American Economic Review* 22, 1335-1356.
- Li, Hongbin, Lingsheng Meng, and Junsen Zhang. 2006. "Why Do Entrepreneurs Enter Politics", *Economic Inquiry* 44, 559-578.
- Liang, Kung-Yee and Scott L. Zeger. 1986. "Longitudinal Data Analysis Using Generalized Linear Models", *Biometrika* 73, 13-22.
- Mackinnon, James, G. and Halbert White. 1985. "Some Heteroskedasticity Consistent Covariance Matrix Estimators with Improved Finite Sample Properties", *Journal of Econometrics* 29, 305-325.
- Masters, William A., and Margaret S. McMillan. 2001. "Climate and Scale in Economic Growth", *Journal of Economic Growth* 6, 167-186.
- Pande, Rohini, and Christopher Udry. 2005. "Institutions and Development: A View from Below", in R. Blundell, W. Newey and T. Persson ed. *Proceedings of the 9th World Congress of the Econometric Society*, Cambridge University Press.
- Perotti, Enrico. 2002. "Lessons from the Russian Meltdown", CEPR Policy Paper No. 9.
- Randolph, Sean. 1994. "Economic Reform and Private Sector Development in Russia and Mexico", *Cato Journal* 14, 109-124.
- Rodrik, Dani. 2006. "Goodbye Washington Consensus, Hello Washington Confusion?", working paper, Harvard University.
- Roland, Ger  ld, Yingyi Qian, and Chenggang Xu. 1999. "Why Is China Different from Eastern Europe? Perspectives from Organization Theory", *European Economic Review* 43, 1085-1094.

Roland, Gérard, Yingyi Qian, and Chenggang Xu. 2006. "Coordination and Experimentation in M-form and U-form Organizations", *Journal of Political Economy* 114, 366-402.

Staiger, Douglas and James Stock. 1997. "Instrumental Variables Regression with Weak Instruments", *Econometrica* 65, 557-586.

Walder, Andrew G. 1995. "China's Transitional Economy: Interpreting its Significance", *China Quarterly* 144, 963-979.

White, Halbert. 1980. "A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity", *Econometrica* 48, 817-838.

Williamson, John. 1989. "What Washington Means by Policy Reform", in John Williamson ed. *Latin American Readjustment: How Much has Happened*, Washington: Institute for International Economics.

Wooldridge, Jeffrey M. 2003. "Cluster-Sample Methods in Applied Econometrics", *American Economic Review* 93, 133-138.

Wooldridge, Jeffrey M. 2006. "Cluster Sample Methods in Applied Econometrics: An Extended Analysis", working paper.

Figure 1: Institutional possibility frontier

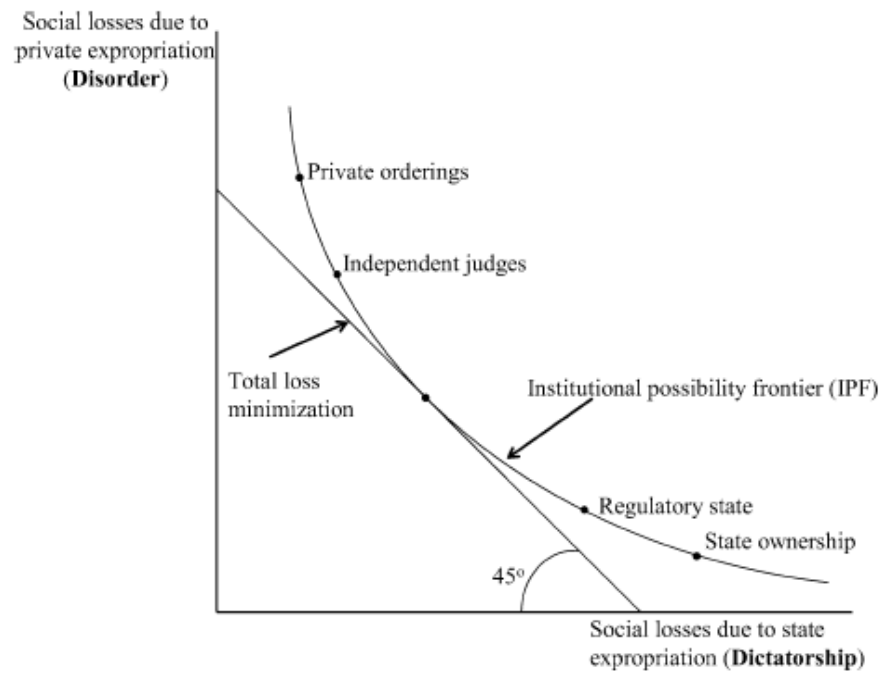


Fig. 1. Institutional possibilities.

The above figure is copied from Figure 1 of Djankov, Glaeser, La Porta, Lopez-de-Silanes, and Shleifer (2003).

Figure 2: Correlation between the power of regional government vis-à-vis market in resolving business disputes and the distance between regional capital city and Beijing

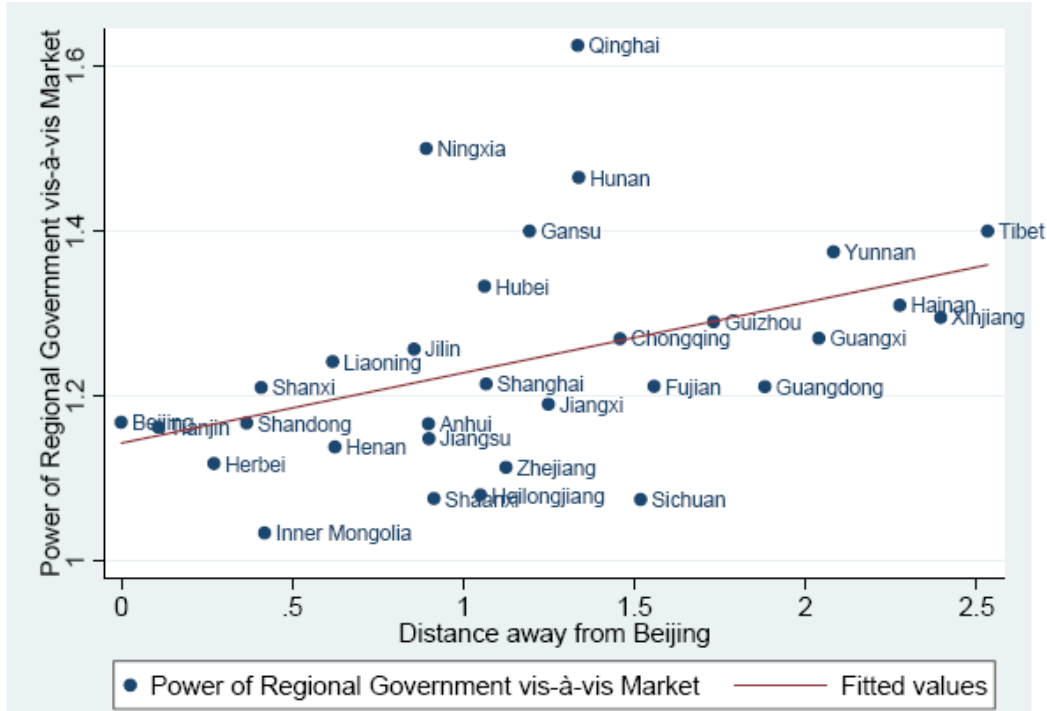


Table 1: Distribution of sample across China's regions

Region	Final Sample	Initial Sample	Percentage	Region	Final Sample	Initial Sample	Percentage
Beijing	89	117	76.07%	Hubei	84	125	67.20%
Tianjin	86	100	86.00%	Hunan	43	64	67.19%
Herbei	135	198	68.18%	Guangdong	137	193	70.98%
Shanxi	38	76	50.00%	Guangxi	37	47	78.72%
Inner Mongolia	29	45	64.44%	Hainan	29	54	53.70%
Liaoning	124	148	83.78%	Chongqing	89	97	91.75%
Jilin	70	80	87.50%	Sichuan	40	60	66.67%
Heilongjiang	87	101	86.14%	Guizhou	62	66	93.94%
Shanghai	121	180	67.22%	Yunnan	32	41	78.05%
Jiangsu	242	279	86.74%	Tibet	5	10	50.00%
Zhejiang	114	165	69.09%	Shaanxi	105	114	92.11%
Anhui	54	78	69.23%	Gansu	30	36	83.33%
Fujian	33	63	52.38%	Qinghai	8	11	72.73%
Jiangxi	42	61	68.85%	Ningxia	14	20	70.00%
Shandong	185	250	74.00%	Xinjiang	44	51	86.27%
Henan	101	143	70.63%				

Table 2: Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Enterprise Performance	2309	1.85	1.27	-4.61	6.59
Power of Government vis-à-vis Market	31	1.24	0.13	1.03	1.63
Education	2307	12.64	2.84	0.00	19.00
Age	2300	43.50	8.26	22.00	75.00
Managerial Experience	2306	4.28	7.23	0.00	61.00
CPC Membership	2309	0.16	0.36	0.00	1.00
CPPCC Membership	2309	0.41	0.49	0.00	1.00
Government Cadre	2309	0.07	0.26	0.00	1.00
SOE Cadre	2309	0.37	0.48	0.00	1.00
Enterprise Size	2309	4.08	1.33	0.00	9.90
Enterprise Age	2287	2.23	0.67	0.00	3.83
Logarithm of Capital-Labor Ratio	1478	1.79	1.15	-2.96	7.25
Logarithm of GDP	31	7.56	1.04	4.66	9.04
Logarithm of Railway Density	30	-4.62	0.88	-6.80	-2.69
Influential Competitors	2256	0.39	0.49	0.00	1.00
Ratio of Extralegal Payments	1136	0.06	0.10	0.00	1.00

Table 3: OLS estimates

Dependent Variable	1	2	3
	Enterprise Performance		
Power of Government vis-à-vis Market	0.53*	0.54*	0.51*
	(0.31)	(0.30)	(0.30)
Entrepreneurial Characteristics			
Education		0.07***	0.08***
		(0.01)	(0.01)
Age		-0.004	-0.003
		(0.003)	(0.003)
Managerial Experience		0.004	0.01
		(0.004)	(0.004)
CPC Membership		0.09	0.14**
		(0.07)	(0.07)
CPPCC Membership		0.01	0.03
		(0.05)	(0.05)
Government Cadre		-0.10	-0.08
		(0.11)	(0.11)
SOE Cadre		0.19***	0.19***
		(0.06)	(0.06)
Enterprise Characteristics			
Enterprise Size			-0.07***
			(0.02)
Enterprise Age			0.03
			(0.04)
Industry Dummy	Yes	Yes	Yes
Regional Characteristics	Yes	Yes	Yes
Number of Observation	2,304	2,290	2,270
R-squared	0.0652	0.1014	0.1042
p-value for F-Test	0.0000	0.0000	0.0000

Robust standard error is reported in the parenthesis. *, **, *** represent significance at 10%, 5%, and 1% level, respectively.

Table 4 : 2SLS estimates

Dependent Variable	1	2	3	4
	First Stage	Second Stage	First Stage	Second Stage
	Power of Government vis-à-vis Market	Enterprise Performance	Power of Government vis-à-vis Market	Enterprise Performance
Power of Government vis-à-vis Market		4.11*** (0.90)		3.64*** (0.88)
Distance	0.08*** (0.01)		0.08*** (0.01)	
Entrepreneurial Characteristics				
Education			-0.00 (0.00)	0.08*** (7.50)
Age			-0.00 (0.00)	-0.003 (0.003)
Managerial Experience			0.00 (0.00)	0.006 (0.004)
CPC Membership			-0.00 (0.00)	0.15** (0.07)
CPPCC Membership			-0.00 (0.00)	0.03 (0.05)
Government Cadre			-0.00 (0.00)	-0.07 (0.11)
SOE Cadre			-0.00 (0.00)	0.19*** (0.06)
Enterprise Characteristics				
Enterprise Size			-0.002* (0.001)	-0.07*** (0.03)
Enterprise Age			-0.005** (0.002)	0.05 (0.05)
Shea Partial R2	0.1519	-	0.1527	-
Anderson Canonical LR Statistic	[379.70]***	-	[376.12]***	-
Cragg-Donald F-statistic	409.55	-	404.21	-
Industry Dummy	Yes	Yes	Yes	Yes
Regional Characteristics	Yes	Yes	Yes	Yes
Number of Observation	2,304	2,304	2,270	2,270

Robust standard error is reported in the parenthesis. *, **, *** represent significance at 10%, 5%, and 1% level, respectively.

Table 5: Experiments for the index of Power of Government vis-à-vis Market

Dependent Variable	1	2	3	4
	Enterprise Performance			
Power of Government vis-à-vis Market	3.64*** (0.88)	1.09*** (0.27)	0.53*** (0.12)	0.75*** (0.18)
Shea Partial R2	0.1527	0.0847	0.1888	0.1698
Anderson Canonical LR Statistic	[376.12]***	[200.98]***	[474.89]***	[422.52]***
Cragg-Donald F-statistic	404.21	207.65	521.93	458.88
Entrepreneurial characteristics	Yes	Yes	Yes	Yes
Enterprise characteristics	Yes	Yes	Yes	Yes
Industry Dummy	Yes	Yes	Yes	Yes
Regional characteristics	Yes	Yes	Yes	Yes
Number of Observation	2,270	2,270	2,270	2,270

The estimation strategy used is 2SLS estimation. The First-stage results and the estimated coefficients of the control variable are not reported to save space (available upon request). Robust standard error is reported in the parenthesis. *, **, *** represent significance at 10%, 5%, and 1% level, respectively.

Table 6: Robustness checks

	1	2	3
Panel A: Second Stage of 2SLS			
Dependent Variable	Enterprise Performance		
Fan-Zhu-Wang Index	-0.18*** (0.04)		
Power of Government vis-à-vis Market		4.28*** (0.94)	1.66* (0.94)
Entrepreneurial Characteristics			
Education	0.07*** (0.01)	0.08*** (0.01)	0.02** (0.01)
Age	-0.003 (0.003)	-0.001 (0.004)	-0.004 (0.003)
Managerial Experience	0.004 (0.004)	0.004 (0.004)	-0.00 (0.004)
CPC Membership	0.16** (0.07)	0.15* (0.08)	0.04 (0.07)
CPPCC Membership	0.04 (0.05)	0.03 (0.06)	-0.11** (0.06)
Government Cadre	-0.11 (0.11)	-0.05 (0.12)	-0.22* (0.12)
SOE Cadre	0.11* (0.06)	0.16** (0.07)	0.05 (0.06)
Enterprise Characteristics			
Enterprise Size	-0.09*** (0.03)	-0.06** (0.03)	-0.03 (0.03)
Enterprise Age	0.04 (0.05)	0.03 (0.05)	-0.07 (0.05)
Logarithm of Capital-Labor Ratio			0.64*** (0.03)
Panel B: First Stage of 2SLS			
Dependent Variable	Fan-Zhu-Wang Index	Power of Government vis-à-vis Market	
Distance	-1.68*** (0.11)	0.08*** (0.01)	0.08*** (0.03)
Shea Partial R2	0.1542	0.1697	0.1278
Anderson Canonical LR Statistic	[380.22]***	[349.60]***	[199.39]***
Cragg-Donald F-statistic	409.00	378.70	209.71
Industry Dummy	Yes	Yes	Yes
Regional Characteristics	Yes	Yes	Yes
Number of Observation	2,270	1,880	1,458

The first stage of 2SLS includes the same control variables as those in the second stage but does not report these results to save the space (available upon request). Robust standard error is reported in the parenthesis. *, **, *** represent significance at 10%, 5%, and 1% level, respectively.

Table 7: Comparative statistics analysis

Dependent Variable	1	2
	Power of Government vis-à-vis Market	
Influential Competitors	0.16** (0.07)	
Ratio of Extralegal Payments		-1.02* (0.59)
Entrepreneurial Characteristics		
Education	-0.03** (0.01)	-0.03* (0.02)
Age	0.02*** (0.004)	0.02*** (0.01)
Managerial Experience	-0.003 (0.004)	-0.01 (0.01)
CPC Membership	-0.06 (0.09)	-0.14 (0.13)
CPPCC Membership	-0.06 (0.07)	-0.05 (0.10)
Government Cadre	-0.07 (0.13)	-0.21 (0.20)
SOE Cadre	-0.01 (0.07)	0.04 (0.10)
Corporate Characteristics		
Enterprise Size	0.10*** (0.03)	0.13*** (0.04)
Enterprise Age	-0.01 (0.05)	-0.09 (0.09)
Regional Characteristics		
Logarithm of GDP	-0.12*** (0.04)	-0.12** (0.06)
Logarithm of Railway Density	-0.02 (0.04)	0.05 (0.05)
Industry Dummy	Yes	Yes
Number of Observation	2,217	1,124
Pseudo R2	0.0329	0.0423
p-value for chi2	0.0000	0.0000

The estimation strategy used is the ordered probit estimation. Robust standard error is reported in the parenthesis. *, **, *** represent significance at 10%, 5%, and 1% level, respectively.

Table 8: Investigation of rent seeking explanation

Dependent Variable	Input Procurement	Access to Bank Loans	Availability of Production Locations	Supply of Electricity and Water	Recruitment of Skilled Labor	Sales of Output	Sales of Service
Power of Government vis-à-vis Market	-0.45 (0.35)	0.61 (0.72)	-1.37*** (0.44)	-0.42 (0.35)	-1.14** (0.51)	-1.59*** (0.55)	-1.81*** (0.57)
Shea Partial R2	0.1527	0.1554	0.1495	0.1476	0.1446	0.1369	0.1215
Anderson Canonical LR Statistic	[318.50]***	[361.06]***	[298.65]***	[307.93]***	[283.88]***	[275.93]***	[220.71]***
Cragg-Donald F-statistic	342.31	388.37	319.44	329.21	302.68	293.00	232.04
Entrepreneurial characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Enterprise characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regional characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observation	1,863	2,138	1,845	1,928	1,818	1, 874	1,704

The estimation strategy used is 2SLS estimation. The First-stage results and the estimated coefficients of the control variable are not reported to save space (available upon request). Robust standard are reported in the parenthesis. *, **, *** represent significance at 10%, 5%, and 1% level, respectively.